& Hartert, Nov. Zool. viii. p. 187 (Kulambangra, Fauro, Guadalcanar) (1901), p. 377 (Guadalcanar) (1901), ix. p. 588 (Isabel I.) (1902), xii. p. 254 (Rendova, New Georgia, Bougainville) (1905).

The females have the bills distinctly smaller than the males (*Rothsch. & Hartert*).

Cacatua roseicapilla Vieill.; Hartert, Nov. Zool. xii. p. 212 (Alligator River) (1905).

Licmetis Wagl.

I have met with no recent remarks on the two species of this genus.

Calopsittacus Less.

Calopsittacus novæ-hollandiæ (Gm.); Sharpe, Hand-list, ii. p. 11 (1900).

Calopsitta novæ-hollandiæ Dub. Syn. Av. i. p. 3 (1899); Hartert, Nov. Zool. xii. p. 212 (Derby) (1905).

[To be continued.]

VIII.—*The Breeding-grounds of the Rosy Gull.*

By S. A. Buturlin.

The Rosy Gull (*Rhodostethia rosea*) breeds quite commonly in the Kolymá Delta (where I am now staying) and is actually the most numerous member of the Order Gaviæ there during the summer, except the Black-capped Tern. Up to the time of writing (June 23rd) I have collected 38 skins and 36 eggs of this pretty bird, though I have spared large numbers of adults and their nests expressly to enable me to acquire a sufficient quantity of the young in down and of specimens in the immature plumage.

The delta of the Kolymá, which is the easternmost of the great rivers of the North Polar basin, lies, roughly speaking, between 68½° and 69¾° N. lat. and from 159° to 161½° E. long. This vast area, at least 15,000 square kilometres in extent,

consists of a liberal admixture of lakes, lagoons, channels, rivulets ("viska"), swamps, moors, and damp ground of every description, with dry places only at intervals. The southern part of this delta, some one-third—or even less—of the whole, is covered by forests; the other parts stretch beyond the northern limit of the forests, but are for the most part covered by extremely dense and well-grown bushes of *Alnus incana* (ordinarily 5 to 10 feet high, but occasionally reaching a height of 15 feet with a thickness of from 5 to 6 inches) and by various species of *Salix*. The traveller must go some twenty kilometres from the main channels of the great river, and then perhaps two or three kilometres from the rivulet or "viska" along which he is advancing, to find a little piece of true "túndra," such as I have seen on Kolguev Island, with lichens covering the ground, tiny bushes of *Betula nana* and different *Salices* studded over the drier spots, and mosses and *Carices* clothing the damp portions.

As to climatic conditions, I crossed and re-crossed the delta by means of dogs during the first half of May, when it was the depth of winter from an European point of view; heavy snowstorms then occurred daily and lasted all day long, while the thermometer stood at 20° Celsius below the freezing-point in the daytime and 30° in the night. Towards the middle of May the weather became somewhat better, and the snow melted at midday (freezing again, of course, in the shade), so that on the southern slopes and sandy islands the soil made its appearance. At this time the first specimens of Geese (*Anser serrirostris*, *A. gambeli*, and in smaller numbers *A. rhodorhynchus*) and even Swans (*Cygnus bewicki*) made their appearance, migrating down the river; while about May the 20th small parties of them passed. *Linota exilipes*, *Plectrophenax nivalis*, *Corvus orientalis*, the White-tailed Eagle, and *Lagopus albus* (partly wintering in the district) had of course long been present. Then migration stopped, and snowstorms began again until May the 27th. That day was fine with only some 3°–6° Cels. of frost, so that the snow melted in the hot sun, and on this

and the following days Geese, Swans, Ducks, Gulls (*Larus vegæ* and (?) *L. glaucescens*), and Waders (especially *Tringa maculata, T. subarquata, T. sakhalina, Phalaropus fulicarius,* and *Charadrius fulvus*) migrated in great numbers. At last, on May the 30th, it rained, while the thermometer varied between 16° Cels. above zero and as much below; snow became scanty on the open places, and the first Rosy Gull was reported*. On the morning of May the 31st one of my men saw a pair, and during the day I went on the river—where the fathom-thick ice was still quite safe—and came across several dozens. The sun was shining brightly, and in the distance each pair appeared like so many roseate points on the bluish ice of the great stream. I say "pair," as from their first arrival the birds were constantly seen in pairs. They had evidently just finished their migration and were tired after their exertions; for they sat very quietly on the ice, and though all attempts to stalk them were unavailing, they would not fly far, but only shifted from place to place with a lazy and somewhat uneasy motion of their wings, which made me jot down in my notebook on the spur of the moment that the flight was more Fulmar-like than Gull-like.

Several hours later they had evidently recovered from their fatigues, and then I saw that their flight, far from being Fulmar-like, was really much more Tern-like. They became quite easy of approach, even more so than the Terns, and I was able to observe them and procure specimens when I wished. On this and several following days they were always to be found on a little shallow lake, some 200 fathoms long and 50 to 70 wide, formed by the melted snow running partly off the river-ice and partly off the sand of the little island. The place was full of life when undisturbed; plenty of Geese, some Swans, flocks of *Fuligula marila* and *F. glacialis*, pairs of *Anas formosa*, clouds of both species of Phalarope,

* It is called here the "Rosy Gull" or "Little Collared Gull" indifferently—in Russian, as the delta of the Kolymá is the only place in N.E. Siberia that I visited where the Russian and not the Yakut language is in common use.

mixed parties of *Limosa baueri* and *Squatarola helvetica, Totanus fuscus, Limicola sibirica, Tringa temmincki, T. subarquata, T. sakhalina, T. maculata,* and *T. acuminata* were constantly to be seen at or near it, in company with lively Black-capped Terns and flocks—mournful and silent—of *Xema sabinii.*

Rosy Gulls hovered over this lake catching flies and other insects, or swam upon the surface, though they more often sat on the snow and ice in the vicinity. Both birds of a pair usually sat close together ; and if the male, easily distinguishable even at a distance by his much more intense coloration, thought that others came too close, he actually tried to push his mate to one side; or if a male attempted to approach a second time (some of the younger, paler-coloured birds not having as yet paired) he would engage in a short fight with the intruder—in which he was sometimes aided by the female—with angry cries of "miaw-miaw-miaw," to which the retreating culprit responded with a "á-dac, á-dac, á-dac," repeated with different intonations. Every now and then the male tried to express his feelings to his mate by pecking her curiously, as if trying to kiss her, with his open beak on her head or neck, or made a few steps round her to one side or the other, shewing off as some Pigeons do ; then with a sound like t r r r r r r lowered his neck and breast to the ground, and in this position, with all the hinder part of the body, the tail, and the ends of the folded wings high up in the air, continued for some seconds his little promenade before the female, who very rarely engaged in such antics.

The note of *Rhodostethia* is peculiar, being high and more melodious than that of Gulls in general, and very variable. The cries that I most often heard resembled "á-wo, á-wo, á-wo" and "claw, claw, claw" (or "cliaw, cliaw"). When disturbed, the birds have a short cry of "viá, viá, viá," and if much disappointed a longer "kiáw, kiáw" or "kiáoo, kiáoo, viáw." When quarrelling they utter "miáw, miáw, miáw" and "á-dac, á-dac, á-dac," as already mentioned.

The Rosy Gull swims easily, and sometimes I saw it

taking a regular bath. It dipped its head under, while sitting deep in the ice-cold lake, and, throwing the water over its back, moved its wings quickly below the surface, holding them somewhat apart from the body. Then it lifted itself almost clear and threw itself forcibly head downwards into the water. Once a Rosy Gull flew over the surface of the lake with a cry of "carvac-wá" and took up water with its beak on the wing, as Swallows do, but subsequently it settled on the surface for some two or three seconds without folding its wings, which were elevated over the back, and drank after the usual fashion.

From June the 3rd onwards *Rhodostethia* became scarce on the river and was dispersed over the delta, though the snow was still deep in the bushy portions and the ice had only melted for a distance of a fathom or two from the banks. I did not think that the birds had begun to lay their eggs, as the female which was killed on May the 31st had the yolks in the ovaries not more than 8 mm. in diameter; but several clutches were brought to me—all somewhat incubated—on June the 13th, the very day on which the ice on the Kolymá at last broke up. The last four clutches, taken by myself on June the 26th, were so much incubated that the embryos were covered with down, and would have been hatched in a very few days. At this time of the month the bushes of *Alnus* and the *Salices* became perceptibly green, and mosquitos appeared in considerable numbers, but the middle of the lake not immediately connected with the river was still covered with ice.

I found the Rosy Gull nesting in little colonies of from two or three to ten or fifteen pairs, in company with the common Black-capped Tern of the delta, which, however, in nearly every case exceeds it in numbers *.

* This Tern is of the *Sterna fluviatilis* type, but has the whole bill red to the tip, and the breast and belly (not the vent) nearly as grey as the back. Tail with outer webs of two outer pairs of feathers grey; outer web of first primary blackish; dark shaft-stripes on inner webs of primaries not wider than their outer web. So far as I can judge, without books or other materials, it is not *Sterna paradisea*.

A pair or two of *Totanus fuscus* nearly always breed with them, and not unfrequently *Colymbus arcticus* and *Fuligula glacialis*, sometimes accompanied by the White-winged Gull (*Larus glaucescens?*) and a pair or two of *Squatarola helvetica*. A little low island in a lake is usually selected for the breeding-place, and this makes the nests very difficult of access, as until the last days of June a boat can only be used near the banks and must be then dragged over the ice, which is exceedingly slippery and generally unsafe after June comes in, especially near the islands, as I found to my cost. One of the colonies, however, was on a piece of wet tundra near two lakes, a square kilometre in extent, covered with a labyrinth of pools of snow-water from two to six or even ten inches deep, but practicable in wading-boots, thanks to its floor of everlasting ice beneath the underlying mud. Between these pools, which were from fifteen to fifty feet in diameter, were pieces of very wet ground covered with *Carices*, damp mossy spots, and even tiny patches of comparatively dry bog covered with lichens or *Betula nana*. In this colony I found ten nests of *Rhodostethia*, placed, among those of the Tern, on little mossy swamps almost bare of grass, evidently because the more grassy places were too wet and unsafe. But in the remaining colonies the state of affairs was otherwise; there the Tern nested on the moss—sometimes making no nest at all—and laid its one or two eggs much nearer to the dry parts of the little islands, which were perhaps a hundred yards long and from ten to twenty yards wide, while the Rosy Gulls made their nests on wet grassy spots or bogs much nearer to the water, and these nests rose from four to ten inches—generally from five to eight inches—above the surface. The hollow formed in the grass (dead grass, of course, as green grass is hardly seen even by the 20th of June) is about six or seven inches in diameter, but the nest proper is a shallow cup only about four or four and half inches in diameter. It is composed of dry grass and *Carices*, sometimes with the addition of a few dry *Betula* or *Salix* leaves, while I once saw one made of white reindeer-moss. The cup of the nest is from $\frac{1}{8}$ to $\frac{1}{4}$ in.—generally $\frac{1}{4}$ in.—thick.

The Rosy Gull lays sometimes two, but nearly always three, eggs; four are said to be found not uncommonly, but I doubt the fact. The eggs, as might be expected from so beautiful a bird, are very handsome, and, happily for the collector, are quite unlike those of the Black-capped Tern. I measured carefully * 36 eggs of the Gull and 25 of the Tern, with the following results:—

	Rhodostethia rosea.		*Sterna sp.*	
	Length.	Breadth.	Length.	Breadth.
Minimum (of breadth) in mm...	43·0	30·0	43·4	28·4
Minimum of length and the whole egg	38·6	31·0	36·6	28·8
Maximum (of breadth)	44·5	32·9	(and of the whole) 41·9	31·0
Maximum of length and of the whole	45·8	32·1	(not of the whole) 43·4	28·4
Mean (for 36 eggs)	43·3	31·6	(for 25 eggs) 39·4	29·5

The eggs of the Rosy Gull are not only larger and in particular broader than those of its neighbour, but are of quite a different shape, being extremely round for Gulls' eggs, with the small end by no means pronounced. They are much darker and more evenly coloured than any other eggs of the Order known to me, being of a beautiful deep rich olive-green, without any of the greyish or sandy shade so common in eggs of *Sterna* and other members of the Order. They are spotted, especially near the larger end, with chocolate-brown (not earthy brown), the somewhat clouded spots being generally some 3–5 mm. in diameter, and not so sharply defined on the dark ground-colour as is usual in Gavian eggs. The spots are of unequal intensity, some darker, some paler, with every intergradation; they cannot be divided into two sharply defined groups as in other

* I had no means of weighing them.

Gavian eggs, perhaps because the dark markings do not stand out very clearly on the deep olive-green ground-colour.

During the daytime even the female readily leaves the nest, and flies about the pools of water or walks over the melting ice, picking up insects and often slipping in a curious way on the surface. But in the night—the sunny Arctic night—the Rosy Gulls which mob you at some distance from the colony are invariably males.

The Rosy Gull can hardly be called a peaceful bird, though the Terns, comparatively weak as they are, generally begin the trouble, for it is quite prepared to fight, if challenged. Usually the Tern distances its rival in the air, but I have seen the Gull catch it on the wing and give it a good shake. I once saw a female Rosy Gull pounce ferociously on an innocent *Calcarius lapponicus* which was passing, but she was in a very nervous state owing to my examination of her nest, which was going on.

When an intruder visits the colony, the Gulls fly overhead and scream, but are far less noisy and anxious than the Terns. If he sits down, they very soon become quiet, and the female settles down on her eggs even within thirty or forty yards, and so betrays their position. If the nest is approached, both parents hover overhead persistently, but do not venture nearer than fifteen or twenty-five yards, the male being usually silent, but the female screaming and uttering cries of various descriptions—now the regular note of "kiáoo, kiáoo, kiáoo; miáw, miáw, viáw, viáw; trrrrr"; now the true Larine "kwa, kwa, kwa," or even a Tern-like "ée, ée, ée-kwa, iéw," all with very varied intonation. When the nest has been passed some twenty or thirty paces the female settles down and looks to see if the eggs are still there—on one occasion only, after I had taken the eggs, did she pursue me angrily at close quarters until I had left the colony; this was an intensely coloured, and evidently a very old, bird.

The Rosy Gull and its eggs are too small to be hunted up by the Lamuts or Chukchas of the delta, and rapacious birds

proper are scarce there; but the eggs are often destroyed by the numerous *Stercorarii*, and I have to-day seen (June 30th) two Buffon's Skuas trying to catch the bird itself. In a few days I hope to find young Rosy Gulls in the down, but about them, and other birds collected on my journey, I will write when I return home.

Pokhodskoe, Kolymá Delta,
30 June, 1905.

IX.—*Sur le Waldrapp, "* Corvus sylvaticus *" de Gessner.*

Par Victor Fatio, F.M.B.O.U.

Je m'explique parfaitement la surprise que vous manifestez dans votre aimable article ('Ibis,' 1905, p. 120) sur la seconde partie du volume des Oiseaux de ma 'Faune des Vertébrés de la Suisse,' en face du silence que j'ai cru devoir garder soit quant au Waldrapp, *Corvus sylvaticus* de Gessner (Conradi Gesneri Historiæ Animalium, liber iii., qui est de 'Avium Natura,' Tiguri, M.D.L.V., pp. 337 et 338), soit relativement au mémoire publié sur "*Comatibis eremita* (Linn.), a European Bird," par l'Hon. W. Rothschild, le Dr. E. Hartert et O. Kleinschmidt (Novitates Zoologicæ, vol. iv. pp. 371–377, pls. viii., ix., x.), et à l'article de O. Kleinschmidt sur *Geronticus eremita* L., imprimé dans le nouveau 'Naumann' (vol. vii. pp. 199–202).

Si je me suis tu jusqu'ici, c'est dans l'idée que Gessner avait été mal renseigné ou induit en erreur, et que les rapprochements proposés par les auteurs précités sont fort discutables. J'aurais certainement continué à me taire si vous ne m'eussiez, pour ainsi dire, mis en demeure de donner mon avis. Que les trois éminents ornithologistes qui ont signé l'article des 'Novitates' veuillent bien me pardonner de ne pas partager ici leur opinion.

Quoique grand admirateur, comme Zoologiste et comme Suisse, des ouvrages fondamentaux de Gessner, je ne puis me